

Patent Claims

1. Apparatus for generating a torque, having at
5 least two bodies (12) which are coupled to one another
in such a way that they can perform a rotational
movement, in which one body (12) moves in the direction
of the force of gravity and the other in the direction
opposite thereto, each body (12), when changing the
10 direction of movement, altering its volume so that the
volume of the body or bodies (12) moving in the
direction of the force of gravity is less than that of
the bodies (12) moving in the opposite direction.
2. Apparatus according to Claim 1, characterized
15 in that the two bodies (12) coupled to one another are
so designed that, despite the alternating changes of
volume of the individual bodies (12), the total volume
of all bodies (12) is substantially constant.
3. Apparatus according to Claim 1 ~~or 2~~,
20 characterized in that the bodies (12) are arranged
opposite one another in pairs relative to the
rotational movement.
4. Apparatus according to ^{claim 1} ~~one of Claims 1, 2 or 3~~,
characterized in that the bodies (12) become immersed
25 in a liquid during at least part of their rotational
movement.
5. Apparatus according to ^{claim 1} ~~one of the preceding
claims~~, characterized in that the individual bodies
(12) are connected to one another by a tension member
30 (11) which runs in an annular manner over at least one
deflection device (10).
6. Apparatus according to Claim 5, characterized
in that the deflection apparatus (10) possesses at
least one deflection wheel (13) which is mounted on a
35 shaft (14) from which the torque can be taken off.
7. Apparatus according to ^{claim 1} ~~one of the preceding
claims~~, characterized in that each set of two bodies

(12) assigned to one another as a pair, preferably all bodies (12), have the same dimensions.

a 8. Apparatus according to ^{claim 1} ~~one of the preceding claims~~, characterized in that each body is designed as
5 a piston-and-cylinder unit (12), the piston (21) being movable into its extended or retracted position by the weight acting on it as a function of the orientation of the piston-and-cylinder unit (12) relative to the force of gravity.

10 9. Apparatus according to Claim 8, characterized in that the piston length (l_k) satisfies the following equation:

$$l_k \geq h \cdot \frac{p_f}{p_k}$$

15 where h is the maximum depth of immersion of the body (12) into the liquid, p_f is the density of the liquid and p_k is the density of the piston material.

10. Apparatus according to Claim 8 ~~or 9~~, characterized in that each piston-and-cylinder unit (12), in the event of a change in direction of
20 movement, is automatically transferred from its one position, in which the piston (21) is extended or retracted, into its other position, in which the piston (21) is, respectively, retracted or extended.

a 11. Apparatus according to Claim 8 ~~or 10~~, characterized in that the cylinder chambers (16) of the
25 individual piston-and-cylinder units (12) are connected to one another in order to permit a fluid exchange.

12. Apparatus according to Claim 11, characterized in that the cylinder chambers (16) are connected to one
30 another in an annular manner, preferably via a hose (17).

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